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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,687	11/09/2001	Jan Spaenjers	Q66990	5793

7590 04/15/2005

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EXAMINER

MATTIS, JASON E

ART UNIT PAPER NUMBER

2665

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/986,687	Applicant(s) SPAENJERS ET AL.	
	Examiner Jason E Mattis	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/9/01</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 1 and 12 are objected to because of the following informalities.

Both claims 1 and 12 contain multiple misspellings of the word "criterion". For example, line 1 of claim 13 states, "a predetermined criterium". It is recommended that each instance of the word "criterium" be changed to "criterion".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6-12, and 16-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishibashi et al. (U.S. Pat. 5663949).

With respect to claims 1 and 12, Ishibashi et al. discloses an apparatus and method for the transmission and the reception of data (**See the abstract of Ishibashi et al. for reference to a line protection switching system and method, which is a**

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method for the transmission and reception of data). Ishibashi et al. also discloses a plurality of inputs and a plurality of corresponding outputs (**See column 7 lines 13-16 and Figures 1 and 2 of Ishibashi et al. for reference to apparatus 3 of Figure 1 having multiple Fiber Interface Cards and for reference to each Fiber Interface Card having an input and a corresponding output).** Ishibashi et al. further discloses that each input and each output has a respective switching device associated with it (**See column 7 lines 22-32, column 7 lines 58-64, and Figures 1-3 of Ishibashi et al. for reference to selector 103, which is a switch controlling the output signals of the Fiber Interface Card, and for reference to selector 203, which is a switch controlling the input signals from the Fiber Interface Card).** Ishibashi et al. also discloses for each couple of input and output, an active terminating board for coupling this input and output and for further transmitting data (**See column 6 lines 4-6 and Figures 1-3 of Ishibashi et al. for reference to each of the fiber interface cards 10 and 11, which contain a couple of input and output, having fiber interface common cards 20 and 21, which are terminating boards for coupling the input and output and for further transmitting data).** Ishibashi et al. further discloses at least one spare terminating board which is able to replace a defective active terminating (**See column 5 line 53 to column 6 line 6 and Figures 1-3 of Ishibashi et al. for reference to selecting one fiber interface common card to be an active card and one to be a standby card, which is a spare terminating board able to replace a defective active card according to a condition of a fault).** Ishibashi et al. also discloses each terminating board comprising a means to test the quality of the link to

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which it is associated, to compare the quality to a predetermined criterion and to generate a control signal to replace the defective link by another link if the quality does not comply with the predetermined criterion (**See column 7 line 54 to column 8 line 6 and Figure 3 of Ishibashi et al. for reference to APS controller 200 receiving information including K1/K2 bytes, which indicate link faults, which is a measure of link quality, and for reference to the APS controller 200 control the switching of selector 203 based on the received K1/K2 bytes**). Ishibashi et al. further discloses a second control means coupled to the active and spare terminating boards adapted to modify the operation of at least one of the switching devices such that in case of failure of an active terminating board, it is replaced by the spare terminating board (**See column 7 line 65 to column 8 line 6 and Figure 3 of Ishibashi et al. for reference to fault monitor 207, which monitors for the failure of a fiber interface common card, sending APS command messages so that upon failure of a fiber interface common card, a standby fiber interface card replaces the failed card**).

With respect to claims 6 and 16, Ishibashi et al. discloses the switching devices and their control means are all installed on a same appliqué panel, the terminating boards are all installed on the same terminating panel and the coupling between the switching devices and the terminating boards are realized on a back panel (See column 5 line 53 to column 10 line 9 and Figure 1 of Ishibashi et al. for reference to the switching devices being installed on a common fiber interface card, the terminating boards being installed on a common fiber interface common card,

and for reference to the fiber interface card and the fiber interface common card being coupled together on a back panel).

With respect to claims 7 and 17, Ishibashi et al. discloses one spare terminating board being provided for at least two active terminating boards (See column 3 lines 22-28 and Figure 1 of Ishibashi et al. for reference to providing automatic protection switch (APS) using a 1:n protection switching structure, meaning that for each n active boards there is one spare protection board).

Ishibashi et al. also discloses the switching devices are connected in series towards the spare terminating board (See Figure 1 of Ishibashi et al. for reference to selectors 102 being connected in series towards the spare terminating board).

With respect to claims 8 and 18, Ishibashi et al. discloses establishing a priority among the active terminating boards when at least two active terminating boards present a failure (See column 16 lines 1-10 of Ishibashi et al. for reference to using priority switching to switch between terminating boards during a failure).

With respect to claims 9 and 19, Ishibashi et al. discloses that in case of failure, the failed active terminating board is connected as a spare terminating board (See column 12 line 66 to column 13 line 23 and Figure 4 of Ishibashi et al. for reference to what a failure is detected, the active group (ACT), which includes the active fiber interface common card, switching to be a standby group (SBY), meaning the failed active fiber interface common card becomes a standby fiber interface common card).

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With respect to claims 10 and 20, Ishibashi et al. discloses that after replacement of a failed terminating board, the switching devices are connected to allow the control of the correct operation of the replace terminating board (**See column 12 line 66 to column 13 line 23 and Figure 4 of Ishibashi et al. for reference to once a failed ACT group has been replaced returning correct operation of the replacement group such that if the current ACT group fails, that the APS is driven from the fiber interface common card of the old ACT group again).**

With respect to claim 11 and 21, Ishibashi et al. discloses that links are adapted to carry data with different priorities and the in the case of link failure and/or terminating board failure, that the link carrying the data having a highest priority will takeover (**See column 16 lines 1-10 of Ishibashi et al. for reference to using priority switching to switch between terminating boards during a failure, meaning the data highest priority data, as determined from K1/K2 bytes, will be given priority in the APS).**

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2, 5, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi et al. in view of Chang et al. (U.S. Pat. 6226111).

With respect to claims 2 and 13, Ishibashi et al. does not disclose that each switching device comprises a 2 x 2 switch.

With respect to claims 2 and 13, Chang et al., in the field of communications, discloses a protection switching system and method using 2 x 2 switches (**See column 5 line 65 to column 6 line 24 and Figure 3 of Chang et al. for reference to using a 2 x 2 multi-wavelength switch 26 in an automatic protection switching system and method**). Using a 2 x 2 switch has the advantage of allowing the connection of the working and protection lines to be quickly and easily switched upon detection of a failure.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Chang et al., to combine the 2 x 2 switches of Chang et al., with the apparatus and method of Ishibashi et al., with the motivation being to allow the connection of the working and protection lines to be quickly and easily switched upon detection of a failure.

With respect to claim 5, Ishibashi et al. does not disclose that the switching devices are of the optical type.

With respect to claim 5, Chang et al., in the field of communications, discloses a protection switching system and method using optical switches (**See column 5 line 65 to column 6 line 24 and Figure 3 of Chang et al. for reference to using 2 x 2 multi-wavelength switches 26, which are optical switches**). Using optical switches

has the advantage of increasing the speed of the switching apparatus and method by not requiring that signals first be transformed from optical signals to electrical signals before switching.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Chang et al., to combine the optical switches of Chang et al., with the apparatus and method of Ishibashi et al., with the motivation being to increase the speed of the switching apparatus and method by not requiring that signals first be transformed from optical signals to electrical signals before switching.

5. Claims 3-4 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi et al. in view of Eguchi et al. (U.S. Pat. 5737388).

With respect to claims 3 and 14, Ishibashi et al. does not disclose that the spare terminating board comprises a device to test the continuity of the coupling of switching devices.

With respect to claims 3 and 14, Eguchi et al., in the field of communications, discloses a device to test the continuity of the coupling of switching devices in a protection switching environment (**See column 3 lines 1-62 and Figure 19 of Eguchi et al. for reference to a loop-back continuity test being performed to test the continuity of connections of switches coupled to each other**). Testing the continuity of switches connected together has the advantage of providing a way to detect an internal failure within an apparatus by detecting when the continuity test fails, such that protection switching can be activated in response to a detected failure.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Eguchi et al., to combine testing the continuity of switches connected together, as suggested by Eguchi et al., with the apparatus and method of Ishibashi et al., with the motivation being to provide a way to detect an internal failure within an apparatus by detecting when the continuity test fails, such that protection switching can be activated in response to a detected failure.

With respect to claims 4 and 15, while Ishibashi et al. does disclose coupling the switches to each other and to each of the Fiber Interface Common Cards (**See Figures 1-3 of Ishibashi et al.**), Ishibashi et al. does not specifically disclose one terminal of each switch coupled to the corresponding input or output, two terminals coupled to the terminating boards and the last terminal coupled to another switch.

It would have been obvious for one of ordinary skill in the art at the time of the invention, to couple the switches with the terminals as claimed with the motivation being to allow for a concurrent control of the switches by the current active terminating board such that all switches received the same consistent control signals to control the protection switching.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lemaire (U.S. Pat. 6038211) discloses a bi-directional automatic

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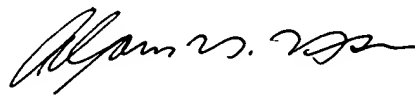
protection switching system and method. Araki (U.S. Pat. 6256291) discloses a redundancy switching system and method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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